Too many children or too many pediatricians?

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Although there has been a marked drop in the birth rate in Canada from 28.3 per thousand in 1946-50 to 18.2 in 1967, the child population aged 0-14 years is expected to increase from 6,593,000 in 1967 to 9,434,000 in 1981.[1] This suggests a need for considerable expansion in the numbers of physicians responsible for child care. Until now there has been no planning of the number of physicians who train as pediatricians or the place in which they choose to practise. Can we afford to allow this pattern to continue?

In considering the provision of medical care for children one may mention a few of the many necessary assumptions:

(1) Each child should have a physician who is responsible for his health supervision.

(2) Illness and accidents are major features of early childhood; most of these are relatively minor and of short duration.

(3) A significant number of children require hospitalization.

(4) Since hospitalization has even greater hazards for the child than the adult, a hospitalized child often needs or would benefit from specialist consultation.

Current situation in Canada

The Dominion Bureau of Statistics gives the figures of the child population for 1967 as shown in Table I.

In 1968 there were 26,909 active civilian physicians in Canada, 11,089 (41.2%) of whom were general practitioners. There were 875 pediatricians listed in the Canadian Medical Directory, but only 769 were active.

The present length of training for pediatricians is the same as for all other specialists. It is supervised by the Royal College of Physicians and Surgeons of Canada and by the College of Physicians and Surgeons of the Province of Quebec, who also are responsible for the examinations. Until he has passed these examinations, the trainee cannot be registered in a province as a specialist. The training is hospital-based and highly disease-orientated, suiting the pediatrician for work in a hospital setting. He is less qualified for routine well-child care. In view of this it is not surprising that most pediatricians practise in large cities; in fact, 721 of 875 (82.4%) of those listed in the Canadian Medical Directory are located in the metropolitan areas in which 48% of the population lives. Looking at it another way, in 1968, 686 (78.4%) were in cities where the 16 medical schools are located. How does this distribution suit the needs of Canadian children? Are they healthy?

It is hard to obtain information on the health status of children.

TABLE I
Child population in 1967

Age		*% of population*
0 - 4 years	2,123,100	10.4
5 - 9 years	2,320,300	11.4
10 - 14 years	2,150,100	10.5
Total	6,593,500	32.3

We have some indication of this status based on the infant mortality rates, and if we use this relatively unsatisfactory measure we can note that in 1963 the infant mortality rate in the 12 largest cities in Canada ranged from a low of 17.8 to a high of 31.8 per thousand live births, with an overall rate of 22.8. In the rural areas the rates varied from a low of 23.0 to a high of 104.2 per thousand live births, with an overall rate of 28.7. In the larger cities we have a pediatrician-to-child ratio of approximately 1:4400; for the rest of the country the ratio would be approximately 1:22,000. For the country as a whole in 1968 there was one active pediatrician for every 8574 children. By referring to the map one may see their distribution, or perhaps we should say maldistribution (Fig. 1). Those children outside the larger cities must have little access to pediatricians.

I have no information about the number of pediatricians working full-time in hospitals, but this number is increasing. In the medical schools it is reasonable to assume that two or three pediatricians will be engaged in full-time activities at each school. Table II gives a breakdown of the subspecialties. It is said that the majority of the

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TABLE II

Certified pediatricians, by primary interest and by province, as of December 1968

Primary interest	*Canada*	*Alta.*	*B.C.*	*Man.*	*N.B.*	*Nfld.*	*N.S.*	*Ont.*	*P.E.I.*	*Que.*	*Sask.*
Pediatrics	730	43	82	45	11	13	16	253	1	243	23
General practice	3	—	—	—	—	—	—	1	—	2	—
Administrative medicine	5	2	—	—	—	—	—	2	—	1	—
Public health	4	—	1	—	—	1	—	1	—	1	—
Allergy	10	1	1	—	—	—	—	7	—	—	1
Cardiology	5	—	—	—	—	1	—	3	—	—	1
Endocrinology	3	1	1	—	—	—	—	—	—	1	—
Hematology	4	—	—	1	—	—	—	2	—	1	—
Pulmonary disease	2	—	—	—	—	—	—	1	—	1	—
Neurology	2	—	—	1	—	—	1	—	—	—	—
Psychiatry	1	—	—	—	—	—	—	1	—	—	—
Total*	769	47	85	47	11	15	17	271	1	250	25

*Includes 15 non-registered.
Source: Canadian Medical Directory master tape of active civilian physicians in Canada, as of December 1968.

730 pediatricians without subspecialties are practising not as consultants but as personal physicians to children. If this is so, experience in the United States would suggest that the average pediatrician in this capacity has a patient load of about 1000 children. We may then assume that Canadian pediatricians are caring for about 700,000 children, slightly over one-tenth of the child population. The remaining children receive care from family physicians, in hospital outpatient departments or child health conferences, or not at all.

Comparison with other countries

Canada is often considered fortunate in being able to benefit from the example provided by Great Britain and the United States. Does this hold true in pediatrics? In Great Britain the pediatrician is well trained and functions only as a consultant. He is responsible for the care of all children who are hospitalized for medical reasons. The appointments to consultant posts are made to allow a reasonable distribution of pediatricians over the country, and a new appointment is made only when a position falls vacant. All other medical care of children is supervised by the general practitioner. In 1966 in England and Wales there was one consultant pediatrician or fully trained senior registrar for every 38,000 children, and in Scotland the ratio was 1 to every 28,000 children.

In the United States the training of the pediatrician is shorter and is not directed entirely toward consultant work. With the staggering drop in the number of general practitioners over the past few years, the American pediatrician is filling the role of a personal physician to children and, together with the internist, is acting as a type of family doctor. In 1961 there was one pediatrician for every 6135 children. At that time it was estimated that more than six times as many pediatricians were needed (a total of 69,000) to allow one for every 1000 children in the U.S.A. By 1967 there was one pediatrician for every 4446 children.[2] It should be noted that this number includes all those who describe themselves as pediatricians, many more than are Board-certified.

These, then, are the approaches in Great Britain and the U.S.A. In one the pediatrician is trained as a consultant and works as one; he is responsible for providing supervision for some 30,000 children. In the other the pediatrician is trained to act more as a children's physician and fills this role although on a numerical basis he is spread rather thin, there being only one for every 4400 children. In Canada the pediatrician is trained as a consultant like his English colleague, but he acts most often as a children's physician like his American colleague. To provide "American"-type pediatric care Canada would need 10 times as many pediatricians as there are at present. On the other hand, if the Canadian pediatrician were to fill his role as a consultant, even allowing a more generous distribution than exists in Great Britain, e.g., one consultant for every 10,000 children or 30,000 of the general population, Canada would need a maximum of

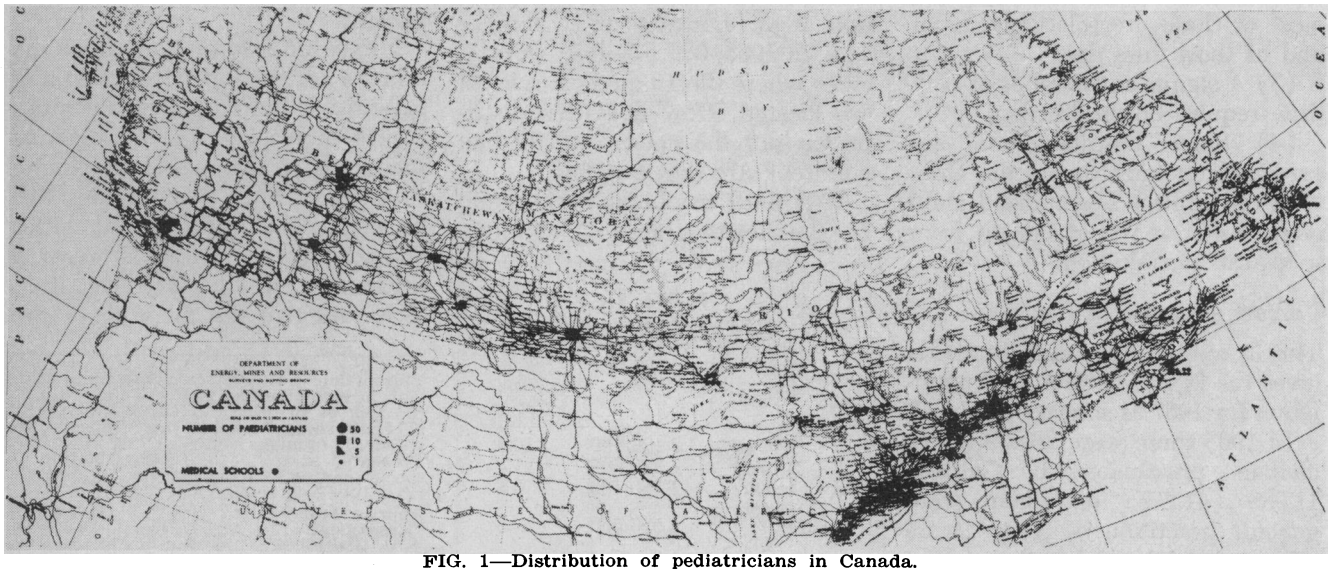

FIG. 1—Distribution of pediatricians in Canada.

700 pediatricians—fewer than are already trained.

Solution

First of all assume that we decide to follow an American pattern of care; let our general practitioners "die out", set up group practices, and train allied health workers in pediatric care. Would this work? Canadian pediatricians are already dissatisfied with the conflict between their training and their usual role. This dissatisfaction would only be aggravated by such an approach. But even with altered and shortened training where would the extra pediatricians come from? Let us say that with the use of ancillary personnel we could increase the patient load of the pediatrician to 1500 children: we would still need over 4000 pediatricians right now and more than 6000 by 1981. The total physician population is expected to increase by only some 5000 by 1976.[3] During the years 1959-68, 385 pediatricians were certified by the Royal College of Physicians and Surgeons of Canada, an average of under 40 a year. The annual attrition rate for physicians is 3.4%, about 25 pediatricians a year.

If we elected to change to the English system, regional appointments of consultant pediatricians could be made to allow a more equitable distribution. The extra pediatricians could be slowly phased out and training of new consultants geared to expected vacancies. In Canada such country-wide planning is not really feasible since health is a provincial responsibility. One doubts whether Canadian pediatricians would want or indeed tolerate this kind of direction.

The solution to this problem undoubtedly lies in the co-operation of the pediatrician and the family physician. The family physician in Canada is still viable; excellent training courses have recently been established and more will likely follow. The general practitioner must act as the primary physician and must be given assistance and encouragement in the more remote geographical areas. We can assume that he would carry a patient load of about 2500 to 3000, of whom some 800 to 1000 would be children. There are enough general practitioners already available for this plan. The next step is to deflect more pediatricians into consultant work by concentrating on priority areas.

If possible a pediatrician should see every newborn in the first week of life, so that about 450,000 visits a year would be required. The infant should be seen in consultation at least once more during the first year of life, another 450,000 visits.

The average physician in Canada, no matter which type of major practice he is involved in, has some 6336 patient-visits during a 48-week year.[1] Reducing this by one-quarter to allow more time per patient would bring the figure to some 4700 patient-visits. On this basis the pediatricians in Canada should have time for some 3.5 million patient-visits, or at least 2.5 million in addition to the suggested infant examinations. This time would be devoted to other consultations in and outside hospital, to teaching and research, to reading and to attending meetings.

Marsh and Tompkins[4] describe a joint consultation service between a pediatrician and several general practitioners with a group practice totalling 15,000. The pediatrician had 78 consultations outside hospital from this group over the course of 18 months. Lee[5] described his experience as a pediatric consultant in an area with a population of 75,000 people. He listed a total of almost 2000 cases seen over a six-year period, two-thirds of which were seen in hospital. The above papers would suggest that family physicians do not, at present, consult the pediatrician overmuch.

It is neither practical nor desirable that the pediatrician be responsible for all children in hospital. Depriving the general practitioner of the care of his patients and from access to hospitals has been a source of dissatisfaction in the National Health Service.

The College of Family Physicians of Canada together with the Canadian Paediatric Society should decide the optimal training which is necessary for the family physician to ensure that he is competent to deal with all routine well- and ill-child care. The pediatric assistant would be a valuable aid to the practitioner. The pediatrician could then become a part of a team, acting as a consultant to a group of some 10 or more family physicians and their assistants. The team might cover large areas remote from big cities.

All the above calculations are meaningless if the pediatricians remain permanently in the big cities. However, some universities in co-operation with the Medical Services Branch of the Department of National Health and Welfare have already shown that it is possible to operate a consultation service in a remote area. In New Brunswick, for some years the pediatricians have been making field trips to hold clinics where they see cases gathered by the public health nurses and referred by family physicians.

Another solution to this problem would be to set up well-child teams in local health departments or in hospitals who would do all routine well-child care, including school health, leaving the sick child to the care of the family physician, hospital outpatient departments and a consultant pediatrician; this fragmentation I do not favour.

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References

1. Canada, Royal Commission on Health Services: Report, vol. 1, Queen's Printer, Ottawa, 1964.
2. United States Center for Health Statistics: Health Manpower, United States, 1965-1967, P.H.S. Publication No. 1000—Series 14—No. 1, Washington, 1968.
3. Canada, Royal Commission on Health Services: Report, vol. 1, Queen's Printer, Ottawa, 1964, p. 524.
4. Marsh, G. N. and Tompkins, A. B.: *Brit. Med. J.*, **2**: 106, 1969.
5. Lee, W. J.: *Pediatrics*, **26**: 862, 1960.